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10/734,148	12/15/2003	Naoki Kitagaki	118100	9318

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EXAMINER	
NGUYEN, LINH THI	
ART UNIT	**PAPER NUMBER**
2627	

DATE MAILED: 11/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/734,148	KITAGAKI ET AL.	
	Examiner	Art Unit	
	Linh T. Nguyen	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 5-26* is/are pending in the application.

4a) Of the above claim(s) *2 and 3* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 5-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 7, 8, 13, 14, 15, 16, 21, 22, 24, and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Takada et al (US Patent number 5818808).

In regards to claims 1 and 25, Takada et al discloses an information-recording method for recording information on an information-recording medium, the information-recording method comprising: moving a light beam at a selected linear velocity relative to the information-recording medium (Column 4, lines 59-63); controlling the light beam to generate a multi-pulse (Fig. 5A) having at least three power levels of a first power level Ph (Fig. 5A, Pw), a second power level P1 which is lower than the first power level (Fig. 5A, Pr), and a third power level Pm (Pb) which is intermediate there between (Fig. 5A-B, Pb is between Pw and Pr), the multi-pulse being repeatedly modulated between the first power level Ph and the third power level Pm (Fig. 5A); adjusting the third power level Pm in response to the selected linear velocity (Column 8, lines 14-18 and lines 39-42); and recording the information by irradiating the information-recording medium with the controlled light beam including the adjusted third power level to change a state of an irradiated portion of the information-recording medium (Column 5, lines 33-35).

In regards to claim 2, Takada et al discloses the information-recording method according to claim 1, wherein the third power level Pm (Pb) is adjusted so that the third power level Pm is increased in proportion to the linear velocity (Column 8, lines 39-42).

In regards to claim 7, Takada et al discloses the information-recording method according to claim 1, wherein a pulse width of a leading pulse or a tail pulse of the multi-pulse is adjusted in response to the third power level Pm (Fig. 5A, the interval of ß1T is at Pr level and Fig. 5B the interval of ß1T of is between Pe and Pr).

In regards to claim 8, Takada et al discloses the information-recording method according to claim 7, wherein the pulse width of the leading pulse or the tail pulse of the multi-pulse is adjusted so that the pulse width is increased in proportion to the third power level Pm (Fig. 5A-B, and Column 10, lines 10-20).

In regards to claim 13, Takada et al discloses the information-recording method according to claim 1, further comprising reading the selected linear velocity from the information-recording medium before recording the information, wherein the information is recorded with the CLV system (Column 7, lines 45-50).

In regards to claim 14, Takada et al discloses the information-recording method according to claim 1, wherein the information is recorded with the CAV system, and the selected linear velocity differs depending on a position on the information-recording

medium in which the information is recorded (Column 9, lines 45-50).

In regards to claim 15, Takada et al discloses an information-recording medium for recording information by irradiating the information-recording medium with a light beam to change a state of an irradiated portion of the information-recording medium, the information-recording medium comprising: a recording layer which causes the change of state (Column 11, lines 45-51); a substrate which supports the recording layer (Fig. 8, element 3); and management information which is recorded on the substrate or the recording layer (It is well know in the art that a CD will have a management information), wherein: the radiating light beam is modulated to contain a multi-pulse having at least three power levels of a first power level Ph, a second power level P1 which is lower than the first power level (Fig. 5A), and a third power level Pm (Pb) which between the first and second power levels (Fig. 5A, Pb has a range from Pe to Pr), the multi-pulse being repeatedly modulated between the first power level Ph and the adjusted third power level Pm; and the management information includes information which relates to a linear velocity for moving the light beam relative to the information-recording medium (Column 14 lines 42-46) and information which relates to the first power level Ph, the second power level P1, and the third power level Pm adjusted in response to the linear velocity (Column 14, lines 51-54).

In regards to claim 16, Takada et al discloses the information-recording method according to claim 1, wherein a ratio Pm/Ph of the third power level Pm with respect to

the first power level Ph is adjusted in response to the linear velocity (Column 29 and 30, Table 1: in double speed Pb=0.8 / Pw=14 and in quadruple speed Pb=6 / Pw=15).

In regards to claims 21, Takada et al discloses the information-recording medium according to claim 15, wherein the management information includes values of the first power level Ph, the second power level P1, and the third power level Pm at a plurality of recording speeds respectively (Column 16, lines 5-10 and lines 15-20; each examples have different velocity and power).

In regards to claim 22, Takada et al discloses the information-recording medium according to claim 21, wherein a value of (Ph (Pw) – Pm (Pb)) at a high linear velocity is smaller than a value of (Ph-Pm) at a low linear velocity (Fig. 15A-C).

In regards to claim 24, Takada et al discloses the information-recording medium according to claim 15, wherein the information is recorded with the CLV system or the CAV system (Column 14, lines 29-33).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5, 6, 9, 10, 11, 12, 17, 18, 19, 20, 23, and 26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) in the MPEP 2144.05 (II).

In regards to claims 5, 18 and 25, Takada et al discloses the information-recording method and medium, the third power level Pm (Pb) and the second power level P1 (Pr) with respect to a difference between the first power level Ph and the second power level P1 is adjusted in response to the linear velocity (Column 8, lines 14-25 and Column 9, lines 15-17, since Pw, Pe, Pb, and Pr all changes in response to the linear velocity). However, Takada et al does not disclose the ratio (Pm-P1)/(Ph-P1) of a difference between the powers.

In the case of Antonie stated "a particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation" (MPEP 2144.05 (II)). Hence, Takada et al experiments with different speeds and power levels, that satisfied the ratio equation as set forth (Fig. 15A-C, Pr (P1) in range 0.5-1). At the time of the invention it would have been obvious to a person of ordinary skill to find an equations as taught by Antonie to satisfied the relationship of speeds with recording power as taught by Takada et al. The motivation for doing so would have been to calculate the relationship of power and speed.

In regards to claims 6 and 19, Takada et al discloses the information-recording method and medium, wherein the ratio (Pm-P1)/(Ph-P1) is adjusted so that the ratio (Pm-P1)/(Ph-P1) is increased in proportion to the linear velocity (Fig. 15A-C, using Pr (P1) equal to 1 mW (Column 15, lines 13-19), therefore, the values increase proportionally with linear velocity: for example, Fig. 15B, 5.6 m/s the value is .2 and Fig. 15C, 10m/s the value is .3). However, Takada et al does not but Antonie suggest the ratio of power due to experimentations. The motivation is the same as claim 5 above.

In regards to claim 9, Takada et al discloses the information-recording method according to claim 1, wherein a pulse width of a leading pulse or a tail pulse of the multi-pulse is adjusted in response to a ratio Pm/Ph of the third power level Pm with respect to the first power level Ph (Column 5, lines 36-47; the pulse width (ßiT and αiT) corresponds to the changes of Pw/Pb/Pe). However, Takada et al does not but Antonie suggest an obvious to the ratio of Pm/Ph through experimentation. The motivation is the same as claim 5 above.

In regards to claim 10, Takada et al discloses the information-recording method according to claim 9, wherein the pulse width of the leading pulse or the tail pulse of the multi-pulse is adjusted so that the pulse width is increased in proportion to the ratio Pm/Ph of the third power level Pm with respect to the first power level Ph (Fig. 5A-B and Column 11, lines 29-33). However, Takada et al does not but Antonie suggest an obvious to the ratio of Pm/Ph through experimentation. The motivation is the same as

claim 5 above.

In regards to claim 11, Takada et al discloses the information-recording method according to claim 1, wherein a pulse width of a leading pulse or a tail pulse of the multi-pulse is adjusted in response to the third power level Pm and the second power level P1 with respect to a difference between the first power level Ph and the second power level P1 (Column 8, lines 14-25and Column 9, lines 15-17; Since the pulse is change due to Pw, Pe, Pr, Pb, therefore changes ßiT and αiT). However, Takada et al does not discloses the ratio (Pm-P1)/(Ph-P1) of a difference between the powers.
In the case of Antonie stated "a particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation" (MPEP 2144.05 (II)). Hence, Takada et al experiments with different speeds and power levels, that satisfied the ratio equation as set forth (Fig. 15A-C, Pr (P1) in range 0.5-1). At the time of the invention it would have been obvious to a person of ordinary skill to find an equations as taught by Antonie to satisfied the relationship of speeds with recording power as taught by Takada et al. The motivation for doing so would have been to calculate the relationship of power and speed.

In regards to claim 12, Takada et al discloses the information-recording method according to claim 11, wherein the pulse width of the leading pulse or the tail pulse of

the multi-pulse is adjusted so that the pulse width is increased in proportion to the ratio (Pm-P1)/(Ph-P1) of the difference between the third power level Pm and the second power level P1 with respect to the difference between the first power level Ph and the second power level P1 (Fig. 5A-B, the pulses increases as Power increase). However, Takada et al does not discloses the ratio (Pm-P1)/(Ph-P1) of a difference between the powers.

In the case of Antonie stated "a particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation" (MPEP 2144.05 (II)). Hence, Takada et al experiments with different speeds and power levels, that satisfied the ratio equation as set forth (Fig. 15A-C, Pr (P1) in range 0.5-1). At the time of the invention it would have been obvious to a person of ordinary skill to find an equations as taught by Antonie to satisfied the relationship of speeds with recording power as taught by Takada et al. The motivation for doing so would have been to calculate the relationship of power and speed.

In regards to claim 16, Takada et al discloses the information-recording method according to claim 1, wherein a ratio Pm/Ph of the third power level Pm with respect to the first power level Ph is adjusted in response to the linear velocity (Column 29 and 30, Table 1: in double speed Pb=0.8 / Pw=14 and in quadruple speed Pb=6 / Pw=15). However, Takada et al does not but Antonie suggest an obvious to the ratio of Pm/Ph through experimentation. The motivation is the same as claim 5 above.

In regards to claim 17, Takada et al discloses the information-recording method according to claim 3, wherein the ratio Pm/Ph of the third power level Pm with respect to the first power level Ph is adjusted so that the ratio Pm/Ph is increased in proportion to the linear velocity (Table 1: from the number from above ratio, it proportional to the speed). However, Takada et al does not but Antonie suggest an obvious to the ratio of Pm/Ph through experimentation. The motivation is the same as claim 5 above.

In regards to claim 20, Takada et al discloses the information-recording method according to claim 15, wherein a ratio Pm/P1 (Pb/Pr) of the third power level Pm with respect to the first power level Ph is adjusted in response to the linear velocity (Fig. 15B-C and Column 15, lines 13-19, Pr=1mW). However, Takada et al does not but Antonie suggest an obvious to the ratio of Pm/Ph through experimentation. The motivation is the same as claim 5 above.

In regards to claim 23, Takada et al discloses the information-recording medium according to claim 21, wherein a value of (Pm-P1)/(Ph-P1) (Pb-Pr/Pw-Pr) at a high linear velocity is larger than a value of (Pm-P1)/(Ph-P1) at a low linear velocity (Fig. 15A-C). However, Takada et al does not discloses the ratio (Pm-P1)/(Ph-P1) of a difference between the powers.

In the case of Antonie stated "a particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the

determination of the optimum or workable ranges of said variable might be characterized as routine experimentation" (MPEP 2144.05 (II)). Hence, Takada et al experiments with different speeds and power levels, that satisfied the ratio equation as set forth (Fig. 15A-C, Pr (P1) in range 0.5-1). At the time of the invention it would have been obvious to a person of ordinary skill to find an equations as taught by Antonie to satisfied the relationship of speeds with recording power as taught by Takada et al. The motivation for doing so would have been to calculate the relationship of power and speed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linh T. Nguyen whose telephone number is 571-272-5513. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A. Wellington can be reached on 571-272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LN
October 25, 2006

ANDREA WELLINGTON
SUPERVISORY PATENT EXAMINER